Bingnan Li

393 Middle Huaxia Road, Pudong, Shanghai, 201210
(0535) 15153573561 libn@shanghaitech.edu.cn Githhub HomePage

Education

ShanghaiTech University **Sep. 2020 – Jul. 2024 (Expected)**
B.E in Computer Science and Technology Shanghai, China

- **GPA:** 3.89/4.00
- **Ranking:** 2/177(among major) 3/248(among school)

Core Coursework

- Computer Architecture I: A+
- Computer Graphics I: A+
- Artificial Intelligence I: A+
- Computer Vision II: A+
- Introduction to Machine Learning: A
- Deep Learning: A
- Digital Image processing: A
- Algorithm Design and Analysis: A

Publications

Gradient-Map-Guided Adaptive Domain Generalization for Cross Modality MRI Segmentation
Bingnan Li, Zhitong Gao, Xuming He PDF | Code | Poster
Machine Learning for Health (ML4H 2023)

Patents

Segmentation methods, systems, devices and media for cross-modal nuclear magnetic resonance images
Xuming He, **Bingnan Li**, Zhitong Gao,
Chinese Patent, Application Code: 2023113868882 (Submitted)

Research Experiences

Single Domain Generalization in Medical Image Segmentation **Aug. 2022 – Nov. 2023**
Supervisor: Xuming He Shanghai, China

- We proposed a novel domain adaptation method consisting of that achieved SOTA on two MRI datasets.

Domain-Robust Open-Vocabulary Segmentation **Nov. 2023 – Present**
Supervisor: Xuming He Shanghai, China

- We aim to improve the domain generalization capability of both seen and unseen classes.

Selected Course Projects

Multi-Resolution Isosurface Rendering (Computer Graphics I) **Report | Code**

- We visualized the Q-criteria of speed fields around a sphere by Multi-Resolution Isosurface Rendering, our implementation is based on OpenVDB and OpenMP, which is efficient to run on CPU.

Intelligence Strategy Exploration on Chinese Chess (Artificial Intelligence) **Report | Code**

- We explored three intelligent strategies, including MinMax Search, Monte-Carlo Tree Search, and Q-learning, on Chinese Chess. Our implementation includes Python and C++ versions. Extensive comparisons are conducted internally and with other AI models.

Exploration on Novel View Synthesis with Generative Models (Computer Vision II) **Report | Code**

- We explored the capabilities of three mainstream generative models (VAE, GAN, and Diffusion) on Single image Novel View Synthesis. Experiments are performed on SRN ShapeNet dataset and metrics like PSNR and SSIM are reported.

Teaching Experiences

Teaching Assistant | Mathematical Analysis II | ShanghaiTech University Sep. 2021 – Feb. 2022
Teaching Assistant | Discrete Mathematics | ShanghaiTech University Feb. 2023 – Jun. 2023

Activities & Honors & Awards

Officer | *New Media Department* in Student Union Sep. 2020 – Sep. 2021
Team Leader | *first Sichuan Liang Shan* social practice team 2021
2020 Outstanding Officer of Student Union 2021
Social Practice, Outstanding Individual, The Most Outstanding Team Oct. 2021
Industrial Practice, Outstanding Individual, The Most Outstanding Team Oct. 2022
Honored student of the School of Information Science and Technology. 2021, 2022

Technical Skills

Languages: Python, C, C++, Matlab, RISC-V
Developer Tools: JetBrains Pycharm, VS Code,
Technologies/Frameworks: Linux, GPU Cluster, GitHub, PyTorch, Numpy, OpenCV